

## **Analytical synthesis of functional observers for systems with signal perturbations**

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### **Abstract**

© 2014, Allerton Press, Inc. An algorithm for the analytical synthesis of functional observers is proposed which is based on a nondegenerate transformation of a state vector using the technology of matrix canonization and methods for solving linear matrix equations of arbitrary dimension. Conditions of the solvability of the synthesis problem and the invariance of the constructed observer to signal perturbations in the form of a system of linear matrix equations are formulated.

<http://dx.doi.org/10.3103/S8756699014060119>

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### **Keywords**

functional observer, invariance, matrix canonization, signal perturbation, synthesis algorithm